

CLAIMS

We claim:

1 1. Method for depositing a material (3) on a substrate wafer (1) having the
2 following method steps:
3 (a) provision of the substrate wafer (1), which has a growth area (4) intended for
4 a later material deposition,
5 (b) application of a thermal radiation absorption layer (2), which exhibits a good
6 absorption of thermal radiation on the rear side (5) of the substrate wafer (1),
7 which faces away from the growth area (4),
8 (c) heating of the substrate wafer (1) to the deposition temperature,
9 (d) deposition of a material (3) onto the growth area (4) of the substrate wafer (1)
10 by an MOVPE method.

1 2. Method according to Claim 1,
2 in which the material (3) to be deposited is a semiconductor material.

1 3. Method according to Claim 1,
2 in which the material (3) to be deposited comprises at least one layer made of $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$,
3 where $0 \leq x+y \leq 1$, $0 \leq x \leq 1$, $0 \leq y \leq 1$ apply.

1 4. Method according to claim 1,
2 in which a substrate wafer is used which essentially comprises SiC or an SiC-based
3 material.

1 5. Method according to claim 1,
2 in which a material or a material mixture which exhibits inert behaviour during the
3 deposition method in accordance with method step (d) is applied as the thermal
4 radiation absorption layer (2).

1 6. Method according to claim 1,
2 in which a material or a material mixture which is compatible with the material and/or the
3 contact-connecting process of an electrical contact that is to be applied later, is applied
4 as the thermal radiation absorption layer (2).

1 7. Method according to claim 1,
2 in which the thermal radiation absorption layer (2) is applied by means of sputtering in
3 accordance with method step (b).

1 8. Method according to claim 1,
2 in which a doped Si layer, in particular a highly doped Si layer, is used as the thermal
3 radiation absorption layer (2).

1 9. Method according to Claim 8,
2 in which the Si layer is applied with a thickness which lies between 10 nm and 20 μm
3 inclusive.

1 10. Method according to Claim 8,
2 in which the Si layer has a doping of at least $1 \times 10^{19}/\text{cm}^3$.

1 11. Method according to claim 1,
2 in which the heating in accordance with method step (c) is essentially effected by
3 means of thermal radiation.

1 12. Method according to claim 1,
2 in which, in method step (c), a heating source is used which generates thermal radiation
3 of a spectral range for which the thermal radiation absorption layer (2) exhibits good
4 radiation absorption.